Amendments to the Claims

The following listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims

1–35. (Canceled)

36. (Currently amended) A method of imaging and performing an interventional procedure on tissue, comprising the steps of:

inserting an endoscope through a lumen of a body of a living being;

inserting through a working channel of the endoscope a catheter having an ultrasound imaging device located at its distal end, the catheter adapted for at least one of axial movement or rotational movement relative to the endoscope;

imaging a tissue structure located at a distal end of the endoscope with the ultrasound imaging device and displaying the tissue structure in a manner that indicates the depth of penetration of the tissue structure into the body of the living being; and

engaging, with an interventional device inserted through a working channel of the endoscope, the tissue structure imaged by the ultrasound imaging device in order to perform interventional therapy on the tissue structure, the interventional therapy being performed in a manner responsive to the displayed depth of penetration of the tissue structure.

37. (Original) The method of claim 36, wherein the interventional device is located at the distal end of an interventional catheter distinct form the catheter having the ultrasound device, there are at least two working channels of the endoscope, and the catheter having the ultrasound device is inserted through a first of the two working channels and the interventional catheter is inserted through a second of the two working channels.

38. (Original) The method of claim 36, wherein the step of performing the interventional therapy in a manner responsive to the displayed depth of penetration of the tissue structure comprises determining whether the depth of penetration of the tissue structure is sufficiently

limited such that the interventional therapy is justifiable and then, if the depth of penetration is sufficiently limited, performing the interventional therapy.

39. (Original) The method of claim 36, wherein the step of performing the interventional therapy in a manner responsive to the displayed depth of penetration of the tissue structure comprises removing an amount of tissue corresponding to the depth of penetration.

40. (Original) The method of claim 39, wherein the imaging step is performed simultaneously with the step of performing the interventional therapy.

41. (Original) The method of claim 36, wherein the interventional device comprises a scalpel.

42. (Original) The method of claim 36, wherein the interventional device comprises forceps jaws.

43. (Original) The method of claim 36, wherein the interventional device comprises a snare.

44. (Original) The method of claim 36, wherein the interventional device comprises a scissors.

45. (Original) The method of claim 36, wherein the interventional device comprises a needle.

46. (Original) The method of claim 45, wherein the step of engaging the tissue structure with the interventional device comprises injecting a chemical ablation fluid into the tissue through the needle.

47. (Original) The method of claim 45, wherein the step of engaging the tissue structure with the interventional device comprises cutting the tissue with the needle.

48. (Original) The method of claim 45, wherein the step of engaging the tissue structure with the interventional device comprises applying an adhesive material to the tissue using the needle.

49. (Original) The method of claim 36, further comprising the step of transmitting light to the tissue structure, conveying light back from the tissue for analysis by a spectroscopic diagnosis

system, and determining, using the spectroscopic diagnosis system, whether an interventional procedure should be performed on the tissue.

50. (Original) The method of claim 36, wherein the lumen comprises an alimentary lumen.

51. (Original) The method of claim 36, wherein the lumen comprises a pulmonary lumen.

52. (Currently amended) An assembly comprising:

an endoscope;

an elongated catheter shaft constructed to be inserted through a first working channel of the endoscope, the catheter shaft adapted for at least one of axial movement or rotational movement relative to the endoscope;

an ultrasound imaging device disposed at a distal end of the elongated catheter shaft; and

an interventional device constructed to be inserted through a second working channel of the endoscope and for engaging tissue imaged by the ultrasound imaging device.

53. (Previously Presented) The assembly of claim 52 further comprising:

a first optical fiber extending through the catheter shaft for transmitting light to tissue located at the distal end of the elongated catheter shaft; and

a second optical fiber extending through the catheter shaft for conveying light back from the tissue.

54. (Previously Presented) The assembly of claim 52, wherein the interventional device is selected from the group consisting of a scalpel, forceps jaws, a snare, scissors, and a needle.

55. (Previously Presented) The assembly of claim 52, wherein the interventional device is disposed at a distal end of a second elongated catheter shaft.